

**ABSTRACT**

Method and system for detecting the presence and determining characteristics of objects such as ink cartridges in printing systems. The system includes a signal transceiver capable of transmitting signals using a photo emitter and capable of receiving signals sent from the objects using a photo detector, and a monitoring system coupled to the signal transceiver for processing received signals to determine characteristics of the objects. Further, the photo emitter is at least partially covered by a first optical polarizer and the objects include a reflective surface that is at least partially covered by a second optical polarizer. When signals are transmitted from the signal transceiver to the objects, the second optical polarizer allows the signals to reach the reflective surface and reflect back towards the signal transceiver if the orientations of the first and second optical polarizers are substantially the same.

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